SECTION 35

COFFERDAMS AND SHEET PILING

1.35.1 COFFERDAMS

a. When identified by the Designer as a project requirement, the use of Cofferdams shall be scheduled in a project. As per the specifications of Subsection 206.08 of the NJDOT Standard Specifications, Cofferdams shall be constructed to protect a foundation and its construction against damage from a rise in water elevation.

b. The Designer shall clearly identify at the Preliminary submission when the use of a steel sheet piling cofferdam system, that is to remain in place, is required. Necessary dewatering, and the bracing that is needed to withstand external forces that are to be sustained during construction of a project's substructure unit(s), should be evaluated to make this determination.

When this has been has been identified, a complete design of the steel sheet piling cofferdam system shall be provided.

This design shall be included in the contract plans. The minimum required tip elevation of the sheeting shall be detailed.

c. When a steel sheet piling cofferdam system is not required, the use of sheeting, dikes, well points or other means will be permitted for dewatering the foundation area. Such cofferdam systems, with all falsework, sheeting and bracing, shall be removed after the completion of the substructure unit's construction.

d. When the flow of water can not be controlled, a cofferdam system that utilizes a concrete seal shall be provided. The concrete seal shall be placed below the water and below the bottom elevation of the footing.

Sheet piling below the top of seal concrete shall be designated to be left-in-place. (See Guide Sheet Plate 3.13-1 for typical details).

1.35.2 TEMPORARY SHEETING

a. The use of Temporary Sheeting shall be based on conditions where protection of property (embankment control), traffic (stage construction), utilities, construction safety code requirements, etc. is a construction consideration. When a project's construction is governed by such considerations, Temporary Sheeting shall be scheduled in the Contract documents.

The proposed horizontal limits of the Temporary Sheeting shall be detailed in the Plan view of the structure.

b. Ordinarily the design and type of temporary sheeting is the choice of the Contractor. However, it shall be the responsibility of the Designer to review

borings and subsurface soil reports so that any adverse subsurface conditions can be identified. In such cases, the Project's Special Provisions shall provide guidance as to type of sheeting that can be used and any driving and pulling directions that must be followed.

c. Payment limits for Temporary Sheeting must be shown in schematic outline on the plans. The following guidelines are provided:

- Lower Limit: Bottom of excavation.
- Upper Limit: Existing ground line, or 1 meter above existing ground line if additional height is deemed necessary for safety reasons.
- Horizontal Limits: Determined by the Design Engineer based on extent of construction.

1.35.3 SHEETING LEFT IN PLACE

a. When it is identified by the Designer that steel sheet piling is warranted and is the only means to facilitate any phase of a project's construction, the use of Sheeting Left In Place shall be scheduled in the Contract Documents.

b. The Designer shall provide a complete design of the steel sheet piling system. The upper portion of the sheeting shall be detailed to be removed to one (1) meter below the finished ground line.

c. The bottom tip elevation of the sheeting shall be noted on the plans. The following payment limit provisions, as applicable, shall also be designated on the plans:

1.) The lower payment limit of sheeting left in place shall be the bottom tip elevation of the sheeting.

2.) The upper payment limit shall be the top elevation of the seal concrete.

1.35.4 CONSTRUCTION REQUIREMENTS

a. Material for steel sheet piling shall conform to AASHTO M202/M202M or AASHTO M270/M270M, Grade 345.

b. Sheet piling that is to be used in a marine environment shall also conform to AASHTO M270/M 270M, Grade 345. For such instances, it shall be coated with a 406 micrometer application of coal tar epoxy as per SSPC Paint Specification No. 16.

c. The design requirements of Subsection 513.04 of the NJDOT Standard Specifications shall be adhered to in the design of Temporary Sheeting and Sheeting Left In Place.

d. The Basis of Payment provisions of Section 513 of the NJDOT Standard Specifications establish use of pay items for “Temporary Sheeting” and “Sheeting Left In Place”. The Designer shall provide for the use of the proper Pay Item in meeting the project requirements.